Description of a new species of semi-slug, *Fastosarion comerfordae* sp. nov., from Eungella National Park, mid-eastern Queensland (Gastropoda: Eupulmonata: Helicarionidae)

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ABSTRACT

A new semi-slug, *Fastosarion comerfordae* sp. nov., is described from the higher elevations of Eungella National Park in mid-eastern Queensland. Historically the species has been considered to be conspecific with *F. superba* (Cox, 1871) from Mt Dryander, mid-eastern Queensland. Differences in external animal features and penial anatomy are shown to separate the new species from *F. superba*. ❒ *Fastosarion comerfordae sp. nov., Gastropoda, Eupulmonata, Helicarionidae, new species, Queensland, Australia.*

The rainforests between Sarina and Proserpine, mid-eastern Queensland are significant habitats for a large number of land snails many of which are endemic to the region. Among these are a number of semi-slugs (Fam. Helicarionidae) including records of *Fastosarion superba* (Cox, 1871) which is one of Australia's largest semi-slugs. A recent survey exploring the diversity of invertebrates (including land snails) of Eungella National Park (NP) and surrounding areas (Eungella Biodiversity Project) produced a number of semi-slugs from the area's higher elevations (alt. > 800 m) which included specimens of what were historically considered *F. superba*, together with a large brown semi-slug and several other smaller semi-slugs. In order to establish the identity of the large brown specimens, dissections of the genitalia were carried out on several specimens of both the black and brown varieties with unexpected results. The penial chambers of both colour forms of the large semi-slug displayed an identical pilaster pattern indicating that these were just different colour morphs of the same species. But more significantly, the pilaster patterns of these Eungella specimens were quite different from true *F. superba* from Mt Dryander indicating that the Eungella specimens were not *F. superba* and represented an undescribed species. These findings are shown to differ from the conclusions of Scott (1995).

This study describes the new species of semi-slug from Eungella NP on the basis of external animal features and reproductive anatomy and presents new additional distribution records for the species. Specimens from Mt Macartney also cited by Scott (1995) as belonging to *F. superba* were dissected and shown to have a markedly different pilaster pattern from both the Mt Dryander and Eungella semi-slugs indicating that this is also an undescribed species that most likely does not belong within *Fastosarion*.

MATERIAL AND METHODS

Material used in this study is held in the collections of the Queensland Museum (QMMO). Studies of shell characters were carried out on specimens in the museum's dry collection (RC) and anatomical studies were based on ethanol preserved samples (SC). Age cohorts in individual lots are identified by the abbreviations A (adult) and SA (subadult). Undescribed species mentioned in this study from the collections of the Queensland Museum are denoted by a family descriptor and an alpha-numeric codon e.g. Helicarionid MQ 10. Specimens were studied using a WILD M5 stereo microscope and anatomical photographs were taken with a NIKON 4200 Coolpix camera with microscope attachment. Shell measurements (height, diameter) were made using callipers with a precision of 0.01 mm. Whorl counts were made to the nearest 0.125 whorl. Three individuals were dissected in order to confirm constancy of reproductive structures.

Abbreviations used. MEQ, mid-eastern Queensland; Mt, Mount; NEQ, north-eastern Queensland; NP, national park; NSW, New South Wales; nvf, notophyll vine forest; SEQ, south-eastern Queensland; SF, State Forest.

SYSTEMATICS

Class GASTROPODA

Infraorder EUPULMONATA

Superfamily HELICARIONOIDEA

Family HELICARIONIDAE

Genus *Fastosarion* Iredale, 1933

Fastosarion Iredale, 1933: 37; 1937: 9.
Vercularion Iredale, 1933: 38; 1937: 8; 1941: 6.
Fastosarion Iredale Smith, 1992: 231; Stanisic *et al.*, 2010: 302.

Type species. *Vitrina superba* Cox, 1871- by original designation.

Taxonomic issues. *Fastosarion* was introduced by Iredale (1933) as a monotypic genus for the large MEQ semi-slug from Mt Dryander, *Vitrina superba* Cox, 1871. *Vercularion* Iredale, 1933 (type species. *Helicarion bullaceus* Odhner, 1917 = *Helicarion brazieri* Cox, 1873) was also introduced as a monotypic genus for a large semi-slug from the Wet Tropics, NEQ. Iredale (1937, 1941) expanded the latter genus to include a number of other semi-slugs from northern and central NSW and SEQ. Smith (1992) on advice from the late Ron Kershaw synonymised *Vercularion* with *Fastosarion*. Scott (1995) introduced two additional *Fastosarion* species from MEQ and NEQ. Stanisic *et al.* (2010) further expanded *Fastosarion* to include an additional seven newly described semi-slugs from eastern Australia while stating that the genus as defined was most likely polyphyletic. Hyman & Ponder (2010) introduced *Stanisicarion* to accommodate two of the species (*Helixarion freycineti* Férussac, 1921 and *Vitrina virens* Pfeiffer, 1849) previously included in *Fastosarion* on the basis of differences in male genitalia. Hyman *et al.* (2017) relegated *Fastosarion staffordorum* Stanisic, 2010 to the synonymy of *Mysticarion hyalina* (Pfeiffer, 1855). As a result 10 species still remain in the genus.

Diagnosis. Large semi-slugs, shell ear-shaped, glossy with a complete base, protoconch sculpture of fine, very crowded, weakly notched spiral striae or smooth, teleoconch sculpture smooth with short, arcuate growth ridges present at the sutures and ultra-fine spiral lines. Body colour variable, green to orange-brown and black, sometimes with reddish markings. Shell lappets large, not fused, variously sculptured with wart-like pustules or elongate ridgelets; mantle lobes prominent, finely pustulose with large cephalic shield covering most of the neck. Caudal horn small. Slime network prominent. Genitalia with short bursa copulatrix and vagina. Epiphallus with free ascending and descending arms or with two arms fused (*F. papillosa, F. pustulosa*), a retractor caecum situated about half way along its length and a long, coiled flagellum at the epiphallus-vas deferens junction; epiphallus entering penis through a simple pore or spade-like verge (*F. griseola*). Penis relatively long with a prominent sheath, internally with a central longitudinal pilaster and background

pattern of chevron-like, diagonal to obliquely oriented lamellae (*F. superba*), slender, elongate filamentous pilasters (*F. brazieri, F. paluma*) or diamond-shaped pustules (*F. ameyi, F. aquavitae, F. helenkingae, F. schelli*); otherwise with corrugated longitudinal pilasters and a penial verge (*F. griseola*) or with central longitudinal pilasters and a background of irregular pustules (*F. papillosa, F. pustulosa*).

Range. Currently considered to include species from far north-eastern NSW to the Wet Tropics, NEQ.

Remarks. *Fastosarion* Iredale, 1933 is currently under a detailed morphological and molecular review by Isabel Hyman and Frank Köhler (Australian Museum, Sydney) and molecular results to date confirm that the genus as currently defined is polyphyletic. The inconsistent nature of the diagnosis presented above (based on the assemblage of species currently still assigned to the genus) in regard to the genitalia, in particular the penial chamber, would seem to support such a proposal. Other species currently assigned to *Fastosarion* show dramatically different background patterns of elongate filamentous pilasters, diamond shaped pustules, corrugated longitudinal pilasters (with a penial verge) and irregular pustules (Stanisic, unpubl., Hyman, pers. comm.). A final verdict on the generic status of these species is awaiting the outcome of the abovementioned review.

In the interim *Fastosarion comerfordae* sp. nov. is described and assigned to *Fastosarion* based on the close similarity of the male terminal genitalia to that of the genotype.

Fastosarion comerfordae sp. nov.
(Figs 1, 2, 3, 4A-B)

Fastosarion superba Cox, 1871 *auct.*; Stanisic *et al.*, 2010: (*partim*).

Fastosarion superba Cox. Hyman & Ponder, 2010: 47.

Etymology. Named for Deidre Comerford, former Mayoress of the Mackay Regional Council for her support of the Eungella Biodiversity Study.

Preferred common name. Eungella Semi-slug.

Material Examined. All MEQ. Holotype. QMMO85406, animal SC/shell RC, Broken River, Granite Belt Track, Eungella NP (20°10′S, 148°30′E), nvf, under log, 17.xi.2016, J. Stanisic, L. Holcroft. Height of shell 14.03 mm, max. diameter 23.79 mm, min. diameter 18.84 mm, h/maximum d ratio 0.59. Whorls 3.375. Length of preserved animal 60 mm.

Paratypes. QMMO20221, 32A SC/2A RC, 0.5km along Diggings Rd, Eungella NP (21°10′S, 148°24′E), 16.vi.1987, J. Stanisic, D. Potter; QMMO36086, 21A SC/3A RC, lower slopes of Mt Dalrymple, Eungella-Mt William Rd, Eungella NP (21°04′S, 148°35′E), nvf, in discarded palm fronds, 16.v.1990, J. Stanisic, D. & N. Potter; QMMO50272, Eungella NP, 4A SC, Eungella NP (20°54′S, 148°36′E), 26.xii.1993, ANZSES; MO76946, 18A SC, Mt William trig station saddle, Eungella NP (21°01′S, 148°36,′E), 8.iii.1994. ANZSES; QMMO19792, 50A SC/1A RC, Broken River, Eungella NP (20°10′S, 148°30′E), nvf, 800 m, xi.1976, M. J. Bishop; QMMO59653, 60A/SA SC, Dalrymple Heights, Eungella NP (21°02′S, 148°36′E), nvf, 1000m, xi.1976, M. J. Bishop.

Other material. QMMO16422, 2A,1SA RC, Eungella, near schoolhouse, Eungella NP, 13.ii.1986, R. Raven; QMMO50850, 1A SC/1A RC, Dalrymple Rd, Eungella NP (21°02′S, 148°36′E), rainforest, pitfall trap, 9.xi.1991, P. Lawless, R. Raven; QMMO11751, 6A,4SA SC/3A RC, Diggings Rd, Eungella NP (21°09′S, 148°29′E), nvf, 8.vii.1982, J. Stanisic; QMMO20177, 8A,5SA SC/1A RC, 0.7 km along Crediton Rd from Broken River turnoff, Eungella NP (21°11′S, 148°31′E), 16.vi.1987, J. Stanisic, D. Potter; QMMO11705, 1A,1SA SC/2A RC, Broken River, Eungella NP (20°10′S, 148°30′E), nvf, 5.vii.1982, J. Stanisic; QMMO59696, 3A SC/1A RC, Eungella NP (20°10′S, 148°30′E), nvf, 800 m, 28.i.1975, K. McDonald; QMMO11747, 1A,1SA SC Finch Hatton Gorge, c. 10km W Finch Hatton, Eungella NP (21°04′S, 148°38′E), nvf, 8.vii.1982; QMMO64901, 1A SC, top of Finch Hatton Gorge (21°03′48″S, 148°38′09″E), nvf, under log, 30.x.1998, J. Stanisic; QMMO77419, 1A SC, Eungella, south at Crediton, Eungella NP (20°11′S, 148°33′E), 750 m, 17.xi.1992, QM Party; QMMO13460, 1J RC, Broken R., Eungella NP (20°10′S, 148°30′E), nvf, litter, 5.vii.1982, J. Stanisic; QMMO50278, 3SA RC, Mt William, Eungella NP (21°01′S, 148°36,′E), 17.xii.1993. ANZSES; QMMO50277, 1SA RC, Mt William, Eungella NP (21°01′S, 148°36,′E), 16.xii.1993. ANZSES; QMMO50257, 1A SC, Eungella NP (20°52′S, 148°37,′E), 22.xii.1993, ANZSES; QMMO50263, 2A1SA SC, Frederickson Property, Eungella NP (21°02′11″S, 148°35,′06″E), 14.xii.1993, ANZSES; QMMO50431, 1A1SA SC, between Mt Henry and Mt David, Eungella NP (21°02′S, 148°37,′E), 14.xii.1993, ANZSES; QMMO50433, 1SA SC, between Mt David and Mt Dalrymple, Eungella NP (21°02′S, 148°39,′E), 18.xii.1993, ANZSES.

Eungella Biodiversity Study material. QMMO86551, 3A SC, Eungella NP, Mt Dalrymple track, Site C-1200 m, (21.015°S, 148.608°E), alt. 1144 m, rainforest, on ground under palm fronds, J. Stanisic, 12.xi.2013; QMMO86552, 3A SC, Eungella NP, Quandong Lodge

FIG. 1. *Fastosarion comerfordae* sp. nov., preserved holotype, Broken R., Eungella NP, MEQ, QMMO85406. Dart-like markings on side of foot arrowed. Scale lines in mm.

environs (21°04.474'S, 148°32.190'E), alt. 900 m, rainforest, on ground under palm fronds, J. Stanisic, 13.xi.2013; QMMO86553, 3A,2SA SC, Eungella NP, Mt Dalrymple track, Site D-1000 m, (21.059°S, 148.582°E), alt. 971 m, rainforest, on ground under palm fronds, J. Stanisic, 13.xi.2013; QMMO86554, 4A SC, Eungella NP, Mt Dalrymple track, Site C-1000 m, (21.051°S, 148.581°E), alt. 1000 m, rainforest, under logs, J. Stanisic, 13.xi.2013; QMMO86555, 1SA SC, Eungella NP, off Diggings Road, Site D-800m (21.145°S, 148.498°E), alt. 816m, rainforest, J. Stanisic, 13.xi.2013; QMMO86556, 1A SC, Eungella NP, off Dalrymple Road, Site C-800 m, (21.143°S, 148.495°E), alt. 808m, rainforest, under logs, J. Stanisic, 13.xi.2013; QMMO86557, 1A SC, Eungella NP, Mt William, Site A-1200 m, (21.026°S, 148.638°E), alt. 1234 m, rainforest, under logs, J. Stanisic, 14.xi.2013; QMMO86558, 6A SC, Eungella NP, Mt Henry, Site B-1200 m, (21.026°S, 148.627°E), alt. 1164, rainforest, under logs, J. Stanisic, 14.xi.2013; QMMO86559, 4A, 2SA SC, Eungella NP, off Dalrymple Road, Site B-1000 m, (21.036°S, 148.597°E), alt. 972 m, rainforest, under logs, J. Stanisic, E. Window, 15.xi.2013; QMMO86560, 2A SC Eungella NP, off Eungella Dam Road, Site B-800 m. (21.122°S, 148.503°E), alt. 755 m, rainforest, under logs, E. Window, 18.xi.2013; QMMO86561, 2A SC, Eungella NP, off Dalrymple Road, Site A-1000 m, (21.035°S, 148.600°E), alt. 1028 m, rainforest, under logs, E. Window, 20.xi.2013; QMMO86562, 1SA SC, Pelion SF, Owens Creek, Site C-600 m, (21.055°S, 148.636°E), alt. 570 m, rainforest, under logs, E. Window, 25.xi.2013.

Taxonomic issues. *Fastosarion superba* (the Type of the genus) was described from Mt Dryander, MEQ but has also been recognised as occurring in the higher reaches of the Clarke

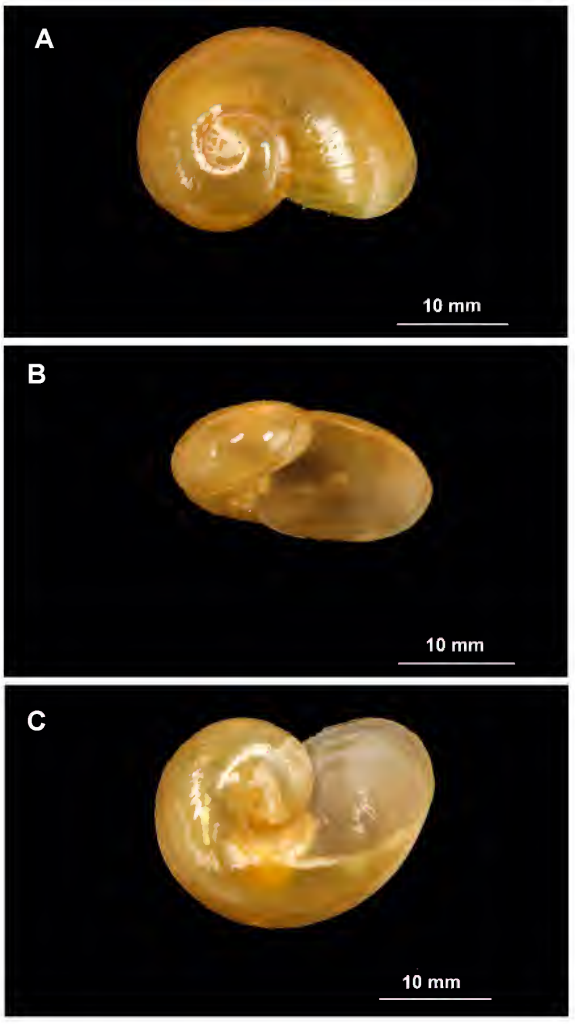

FIG. 2. Shell of *Fastosarion comerfordae* sp. nov., holotype, Broken R., Eungella NP, MEQ, QMMO85406. **A**, dorsal view; **B**, apertural view; **C**, ventral view.

Range in the Eungella NP roughly between Mt Dalrymple and Eungella by various authors (Smith 1992; Scott 1995; Hyman & Ponder 2010; Stanisic *et al.* 2010). Scott (1995) illustrated the terminal genitalia of a Eungella specimen and the penial chamber of one from Mt Dryander assuming that the two were conspecific. Results presented below show that this assumption was incorrect. **Diagnosis**. Large semi-slug, shell ear-shaped, glossy with a complete non-membranous base,

protoconch sculpture of fine, very crowded, weakly notched spiral striae, teleoconch sculpture smooth with short, arcuate growth ridges present at the sutures and ultra-fine spiral striae. Body colour variable, orange-brown to black, occasionally black with red markings, and a series of black dart-like lines on the side of the foot below the pedal grooves continuous to the caudal horn. Shell lappets large, not fused, with wart-like pustules. Genitalia with short bursa copulatrix and vagina. Epiphallus entering penis through a simple pore. Penis internally with slender diagonal pilasters arranged in a chevron pattern and a large, central longitudinal pilaster.

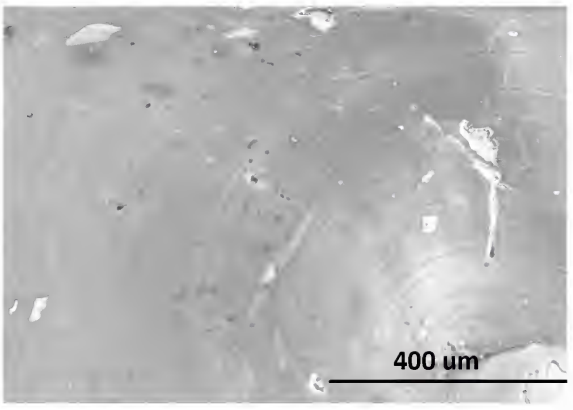

FIG.3. Microsculpture on protoconch of *Fastosarion comerfordae* sp. nov., Eungella NP, MEQ, QMMO50278.

Description. *Animal* (Fig.1. 6A-C). Large semi-slug, body length (in preservative and based on largest specimens from QMMO59653) 52-60 mm (mean 56.56 mm, n= 16). Foot long, slender, tripartite, broadly rounded anteriorly, tapered posteriorly; tail long, keeled mid-dorsally with a small caudal horn. Caudal foss a long vertical slit in tail. Pedal grooves typically aulacopod and united above the tail. Colour (in life) orange-brown to black, occasionally with reddish markings, tripartite foot with outer segments orange to pink and a series of black dart-like lines on the side of the foot below the pedal grooves continuous to the caudal horn. Shell lappets large, right shell lappet subcircular, left shell lappet sickle-shaped, both with wart-like pustules; mantle lobes prominent, finely pustulose with left lobe forming large cephalic shield.

Shell (Figs 2, 3). Shell large, glossy, maximum diameter 19.91-26.15 mm (mean 22.43 mm), minimum diameter 14.66-19.14 mm (mean 16.55 mm), ear-shaped thin and poorly calcified. Whorls 3.125-3.375 (mean 3.250), rapidly expanding. Body whorl expanded, not descending in front, with basal margin complete. Spire and apex flat. Height of shell 12.30-18.95 mm (mean 14.84 mm). Protoconch of 1.5 whorls, sculpture of fine, very crowded, weakly notched spiral striae, teleoconch sculpture with short, arcuate growth ridges present at the sutures and ultra-fine spiral striae. Sutures flat. Whorls rounded above and below the periphery, with internal walls complete. Colour light yellow to golden brown. Based on 10 measured adult shells (QMMO11751, QMMO36086, QMMO20221, QMMO59696, QMMO11705, QMMO19792, QMMO20177).

Genitalia (Fig. 4A, B) Penis long, cylindrical with a thin sheath; internally with relatively coarse, diagonal lamellae arranged in a chevron pattern, and a large, central longitudinal pilaster, pilaster formed by an uplift of the lamellae over a central ridge; verge absent. Epiphallus long, entering penis through a simple pore with equal length ascending and descending arms and a retractor caecum situated halfway along its length, penial retractor muscle inserted on caecum; long, coiled epiphallic flagellum situated at the epiphallus-vas deferens junction; vas deferens a thin coiled tube. Vagina short, internally with longitudinal thickenings, free oviduct relatively long, bursa copulatrix large with thick stalk, head attached halfway along the prostate-uterus; uterus sacculate with prostate a series of white alveoli appressed to the surface of the uterus for its entire length; hermaphroditic duct convoluted and swollen. Based on five dissected specimens (QMMO19792, QMMO36086, QMMO59696, QMMO86558 [2]).

Radula. (Description based on Hyman & Ponder 2010). Radula with tricuspid central tooth that has a broadly lanceolate mesocone and two small, pointed lateral cusps; lateral teeth strongly bicuspid with large mesocone and endocone reduced to a small point high

FIG. 4. **A**, terminal genitalia, *Fastosarion comerfordae* sp. nov., Eungella NP, Mt Henry, MEQ, QMMO86558. B-F, penial chambers of various semi-slugs showing main pilaster and pattern of background pilasters. **B**, *F. comerfordae*, Eungella NP, Mt Henry, MEQ, QMMO86558; **C**, *F. superba*, Mt Dryander, MEQ, QMMO46334; D. Helicarionid MQ10, Mt Macartney, MEQ, QMMO35622; **E**, Helicarionid MQ16, Eungella NP, Quandong Lodge, MEQ, QMMO86552; **F**, *Eungarion mcdonaldi* Stanisic, 1993, Mt Macartney, MEQ, MO35628; **G**, *F. brazieri*, Mosman, NEQ, QMMO60553. [BC, bursa copulatrix; DG, prostate; E, epiphallus; EF, epiphallic flagellum; EP, epiphallic pore; ERC, epiphallic retractor caecum; GD, hermaphroditic duct; P, penis; PP, pilasters; PPM, main pilaster; PRM, penial retractor muscle; PS, penial sheath; UV, free oviduct; UT, uterus; V, vagina; VD, vas deferens].

up on the edge of the mesocone, ectocone short; marginal teeth bicuspid with elongate mesocone and short reduced ectocone. Jaw arcuate. Radular formula ~70.21.1.21.70~.

Distribution and habitat. *Fastosarion comerfordae* sp. nov. occurs in the higher elevations (alt. > 800 m) of the Clarke Range in Eungella NP living in moist notophyll vine forest (Fig. 5). The species has also been found along key drainage lines (e.g. Finch Hatton Gorge, Owens Creek) at slightly lower elevations. *F. comerfordae* has been collected on the ground from under forest debris such as discarded palm fronds, logs and rocks. The wide geographic separation of *F. comerfordae* and *F. superba* by the Sarina-Proserpine lowlands is only matched by the diverse nature of their respective habitats. Whereas *F. comerfordae* lives in moist humid notophyll vine forest *F. superba* inhabits drier araucarian vine forest.

Remarks. *Fastosarion comerfordae* sp. nov. can be differentiated from *F. superba* (Cox, 1871) on the basis of both external animal features and penial anatomy. The animal of *F. comerfordae* is brown to black occasionally with red markings and a series of black, dart-like markings on the sides of the foot below the pedal grooves (Fig. 6A-C). In contrast the animal of *F. superba* is greenish-brown and lacks the black, dart-like markings on the sides of the foot. Most adult specimens of *F. comerfordae* range between 50-60 mm while those of *F. superba* range from 60-70 mm. The maximum diameter of *F. comerfordae* shells measured was 26.15 mm compared with the largest *F. superba* shell of 31.66 mm.

The penial chambers of the two species are grossly similar with diagonal lamellae arranged in a chevron pattern and a large, central longitudinal pilaster formed by an uplift of the lamellae over a central ridge. However, in *F. comerfordae* (Fig. 4B) the main pilaster is shorter than *F. superba* and the lamellae are significantly coarser and thicker than the slender and delicate lamellae of *F. superba* (Fig. 4C). No other semi-slug species (Helicarionid MQ 10) with a similar penial chamber pilaster pattern has yet been found elsewhere in mid-eastern Queensland. The penial chamber of specimens from Mt Macartney cited by Scott

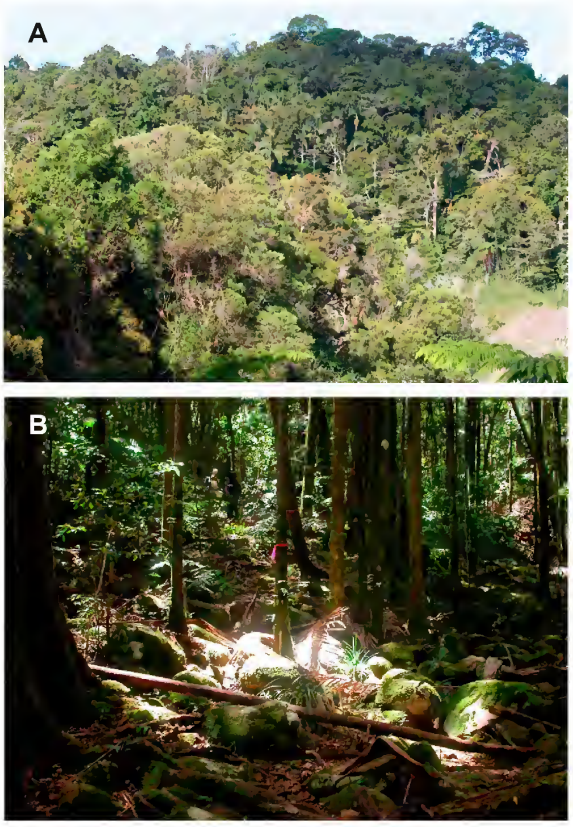

FIG. 5. Habitat of *Fastosarion comerfordae* sp .nov. **A**, Eungella rainforest (alt. 900 m); **B**, microhabitat on Mt Dalrymple track (alt. 1000 m).

(1995) as being conspecific with this species features a series of diamond shaped pustules which aggregate apically into a relatively short longitudinal pilaster (Fig. 4D).

An undescribed species (Helicarionid MQ 16) occurs sympatrically with *F. comerfordae* but can be distinguished from the species through its smaller size and beige animal colour (Fig. 5D). Anatomically, the terminal genitalia of Helicarionid MQ 16 are smaller and the penial chamber features a short central pilaster that is bifurcated basally with a background pattern of sub-rectangular to polygon-shaped pustules (Fig. 4E).

Stanisic (1993) described *Eungarion mcdonaldi* from the upper elevations of the Clarke Range, MEQ. This species is markedly smaller (mean

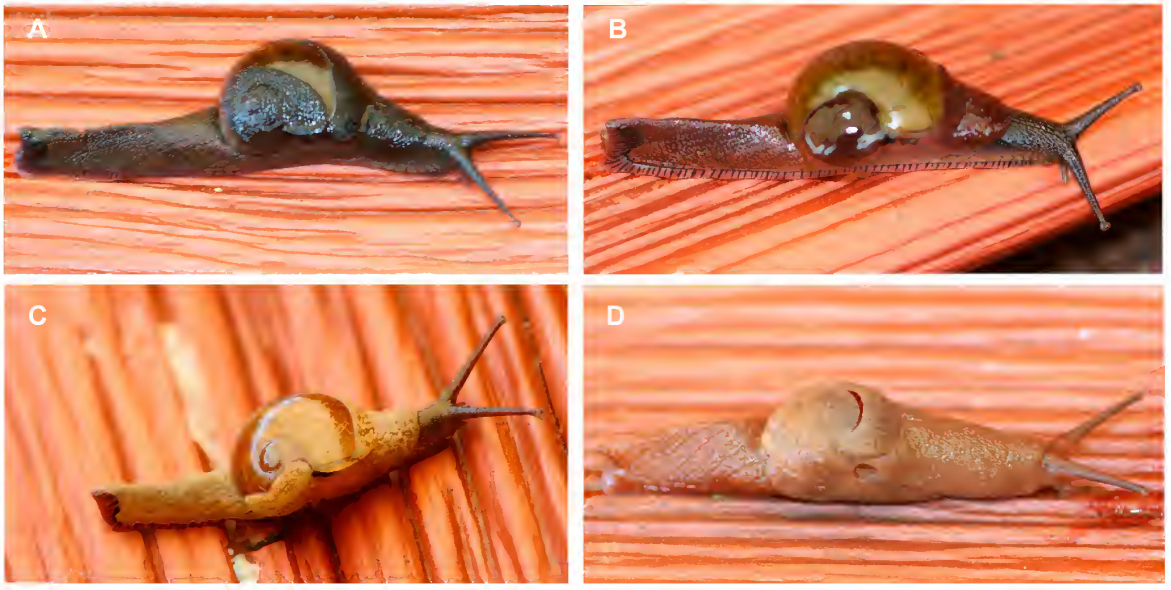

FIG. 6. Eungella semi-slugs. A-C, *Fastosarion comerfordae* sp. nov. **A**, black form; **B**, black with red markings form; **C**, orange-brown form. **D**, Helicarionid MQ16.

animal length 29.9 mm), than *F. comerfordae* sp. nov. and has a penial chamber with a main pilaster and a background pattern of rounded pustules (Fig. 4F).

The Wet Tropics *F. brazieri* (Cox, 1873) also has a similar central longitudinal pilaster and a background pattern of slender, filamentous pilasters tending to be disposed longitudinally rather than diagonally (Fig. 4G).

DISCUSSION

Fastosarion superba (Cox, 1871) has been known from MEQ since the late 1800s and assumed to inhabit both Mt Dryander (type locality) and Eungella NP based on general animal and shell characters. Scott (1995) was the first to investigate the anatomy of the species and concluded that both populations represented the same species. Consequently but somewhat mistakenly, Scott (1995) figured the genitalia of a specimen from Eungella and the penis interior of a specimen from Mt Dryander. The current study shows that the Eungella population is a separate species based on differences in animal features and penial anatomy. A single central longitudinal pilaster with a background chevron-like pattern of diagonal lamellae distinguishes *F. superba* and *F. comerfordae* from others currently in the genus (see generic diagnosis above). However, the protoconch sculpture of the two MEQ species is shared with *F. brazieri* from the Wet Tropics.

Also included in Scott's (1995) concept of *F. superba* were specimens from the heights of Mt Macartney (alt. 900 m) located in the Cathu SF, Clarke Range, north of Eungella NP, MEQ. Dissection showed that this species has a background pattern of diamond shaped pustules and a much shorter apical pilaster consisting of aggregated pustules in contrast to the lamellar pattern of both *F. comerfordae* and *F. superba*. The Mt Macartney species most likely belongs in a separate genus.

For identification purposes *F. comerfordae* can be readily distinguished from *F. superba* and other MEQ semi-slugs by the unique black dart-like markings on the sides of the foot below the pedal grooves (Fig. 1). These markings are present even in very juvenile and longterm preserved specimens.

ACKNOWLEDGEMENTS

I would like to sincerely thank Isabel Hyman, Australian Museum (Sydney) for supplying pertinent information and drawings on the anatomy of several semi-slug species relevant to this study, and for our ongoing conversation on the systematics and biogeography eastern Australian semi-slugs. Two anonymous referees are thanked for their supportive comments.

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